Ref Section/Table Page	From	To	Comment	Disposition msg ID
2.301	LI not defined	LI: Logical Idle	Add to abbreviations	1206
4.301	Consequently, there shall be no further activity between the host and the endpoint on the device until the endpoint notifies the host that it is ready.	Consequently, the host may continue to perform transactions with the endpoint on the device even before the endpoint notifies the host that it is ready.	Corrected to "may" from "shall" as the host does not need to treat the endpoint as being in a flow controlled state.	
6.302		Measured with respect to ground over the maximum range of the differential signal (1200mV)	Add comment for $R_{RX-DIFF-DC}$	1209 (Howard)

6.303 Section 6.10.1 Page: 6-35	All signal and power pins must withstand 2000 V of ESD using the human body model and 500 V using the charged device model without damage (Class 2 per JEDEC JESE22-A114-A). This ESD protection mechanism also helps protect the powered down Receiver from potential common mode transients during certain possible reset or surprise insertion situations.	All signal and power supply pins should be tested for ESD protection levels to the Human Body Model (HBM) and the Charged Device Model (CDM) in accordance with JEDEC JESD22-A114 (for HBM) and in accordance with JEDEC JESD22-C101 (for CDM). ESD protection may help to protect the powered down Receiver from potential common mode transients during certain possible reset or surprise insertion situations.	Clarification	
6.304 Section 6.4.3 Page: 6-11	Remove the following sentence in this section: "Error detection and recovery from a corrupted SKP Symbol is described in Section 6.4.2.13"		SKP symbols errors cannot be detected. And SKP symbol error recovery is not defined.	
6.305 Section 6.8.4.1 Page: 6-27	Add the following statement to the end of section 6.8.4.1 The loopback BERT error count register and associated control mechanisms are optional. A device that does not implement the loopback BERT error count loops back BERC unmodified.			

6.306 Section 6.4.3 Page: 6-	Unless otherwise specified, a transmitter shall insert the integer result of Y/354 calculation Ordered sets immediately after each transmitted TS1, TS2 Ordered Set, LMP, TP Data Packet Payload, or Logical idle. During training only, a transmitter is allowed the option of waiting to insert 2 SKP ordered sets when the integer result of Y/354 reaches 2. A transmitter shall not transmit SKP Ordered Sets at any other time.	Unless otherwise specified, a transmitter shall insert the integer result of Y/354 calculation Ordered sets immediately after each transmitted TS1, TS2 Ordered Set, LMP, TP, DP or Logical idle. During training only, a transmitter is allowed the option of waiting to insert 2 SKP ordered sets when the integer result of Y/354 reaches 2. A transmitter shall not transmit SKP Ordered Sets at any other time.	Correction	
6.307 Section 6.4.3 Page: 6-11	A device must keep a running count of the number of transmitted symbols since the last SK Ordered set. The value of this count will be referred to as Y. The value of Y is reset whenever the transmitter enters Polling.Active	A device must keep a running count of the number of transmitted symbols since the last SKP Ordered set. The value of this count will be referred to as Y. The value of Y is reset whenever the transmitter enters Polling.Active or exits U1/U2/U3 low power states	Count needs to be reset when link exits low power	
6.308 Table 6-21 Page: 6-32	Please see to column	Change depicted after the new Section that is to be added to Chapter 9 at the end of this table.		

7.301 7.5.4.7.1 Page: 7-46	• The port shall transmit Idle Symbols if the next state is U0.	• The port shall transmit Idle Symbols if thenext state is U0. The port may transmit Idle Symbols if the next state is Loopback or HotReset. .	Clarify what can be sent in Polling.Idle	1733
7.302 7.5.10.5.1 Page: 7-54	• The port shall transmit Idle Symbols if the next state is U0.	• The port shall transmit Idle Symbols if the next state is U0. The port may transmit Idle Symbols if the next state is Loopback or HotReset.		
7.304 7.2.4.1.9 Page: 7-20	Upon receipt of LBAD, a port shall send a single LRTY before retransmitting all the header packets in the Tx Header Buffers that have not been acknowledged with LGOOD_n. A port shall set the DL bit in the Link Control Word on all resent header packets and recalculate CRC-5.	Upon receipt of LBAD, a port shall send a single LRTY before retransmitting all the header packets in the Tx Header Buffers that have not been acknowledged with LGOOD_n. A hub shall set the DL bit in the Link Control Word on all resent header packets and recalculate CRC-5. The host or a peripheral device may optionally set the DL bit in the Link Control Word on any resent header packets and recalculate CRC-5. If the retried packet is a DP and the DL bit in DPH is clear, the DPH must be followed by a DPP.	Make it optional for a peripheral device or host.	1348

7.305 7.3.10 Page: 7-32	These error situations are largely not due to link errors. A port's behavior under these situations is undefined and implementation specific. It is recommended that a port ignore those unexpected link commands or header packets.	These error situations are largely not due to link errors. A port's behavior under these situations is undefined and implementation specific. It is recommended that a port ignore those unexpected link commands or header packets. If the ports are directed to different link states based on TS2 ordered set, the downstream port's TS2 ordered set overrides the upstream port's. For example, if a downstream port issues Hot Reset in its TS2 ordered set, and an upstream port issues Loopback mode, Hot Reset overrides Loopback. The ports shall enter Hot Reset.	Clarification	1187
7.306 7.2.4.1.2 Page: 7-18	Note: Delay matters primarily for ITPs.	Note: The delayed bit only has significance if it is set in an ITP. If a device uses the ITP to synchronize its internal clock then it should ignore any ITPs with the delayed bit set.	Clarification	1423
7.307 7.5.7.1 Page: 7-49	• The SuperSpeed transmitter DC common mode voltage shall be within specification (VTX-CM-DCACTIVE-IDLE-DELTA) defined in Table 6-10.	• The SuperSpeed transmitter DC common mode voltage shall be within specification (VTX-CM-DCACTIVE-IDLE-DELTA) defined in Table 6-11.	Incorrect cross reference	1841

7.308 7.3.4 Page: 7-29	A valid link command is declared upon detection of a link command and one of the following two conditions is met: 1. Both link command words are the same. They both contain valid link command information as defined in Table 7-4. They both pass the CRC-5 check. 2. The two link command words are not the same, with one link command word containing valid link command information as defined in Table 7-4, passing the CRC-5 check, and the other link command word either failing the CRC-5 check, or not containing valid link command information as defined in Table 7-4.	A valid link command is declared if both link command words are the same, they both contain valid link command information as defined in Table 7-4 and they both pass the CRC-5 check.	To overcome descrambler error (out of sync) induced burst error.	

7.309 7.5.6 Page:7-49	Note: After entry to U0, both ports are required to exchange port capabilities information using LMP within tPortConfiguration time as defined in Section 8.4.5	Note: After entry to U0, both ports are required to exchange port capabilities information using LMP within tPortConfiguration time as defined in Section 8.4.5. This includes the following scenarios. 1. Entry to U0 from polling directly; 2. Entry to U0 indirectly from Polling through Hot Reset; 3. Entry to U0 from Recovery and port configuration has not been successfully completed after exiting from Polling. In this case, both ports shall continue the port configuration process by completing the remaining LMP exchanges.	Clarification on LMP. This errata overrides the Q1 errata of 7.010	
7.310 Table 7-5 Page: 7-14	Change the following entry in the LRCD_x row from: • LGOOD_n is sent	To: • LGOOD_n has been or will be sent		

7.311 Section 7.2.4.2.2 Page 7-24	d. It is not directed by a higher layer to reject entry. Examples of when a higher layer may direct the link layer to reject entry are: (1) U1 or U2 is not enabled (e.g., PORT_U1_TIMEOUT or PORT_U2_TIMEOUT set to zero);	d. It is not directed by a higher layer to reject entry. Examples of when a higher layer may direct the link layer to reject entry are: (1) downstream port is not enabled for U1 or U2 (i.e., PORT_U1_TIMEOUT or PORT_U2_TIMEOUT set to zero);		
8.303 Table 8-23 Page: 8-24	Replace the following sentence in the **End Of Burst (EOB)/Last Packet Flag (LPF)** row: The EOB field may be set when the device sends a short packet.	Note that a device is not required to set this field to a 1b when it transmits a short packet even if it will be returning fewer than the number of packets requested in the NumP field of the last ACK TP it received. It is only required to set this field to a 1b if it wants to enter the flow control state after completing the current transfer with this short packet.	Clarify that EOB does not need to be set by a device when it sends a short packet.	1420
8.304 8.12.1.4.5.7 Page: XXX		OUTMvData instead of INMvData		

8.305 8.1 Page: 8-2	• Receives a DP or NRDY or STALL TP or the transaction times out for the current ACK TP sent to a non-isochronous endpoint or	• Receives all DPs or an NRDY or a STALL TP or the transaction times out for the current ACK TP sent to a non-isochronous endpoint or	Changed first bullet from 'a DP' to 'all DPs'.	1845
8.306 8.10.2 Page: 8-28	The **NumP** field can be incremented at any time by the host or a device sending the ACK TP aslong as the device or host wants to continue receiving data. The only requirement is that the **NumP** field shall not have a value greater than the maximum burst supported by the device.	The **NumP** field can be incremented at any time by the host or a device sending the ACK TP as long as the device or host wants to continue receiving data. The only requirement is that the **NumP** field shall not have a value greater than the maximum burst supported by the device. However for an ISOC IN endpoint, refer to section 8.12.6.1 on additional requirements of how to change **NumP** for each burst.	Reference to ISOC requirements section	

8.307 8.12.5 Page: 8-59	A device shall not assume that transactions occur at the same location within each service interval.	A device will detect the start of new service interval by detecting the rollover of least significant bits in the Bus Interval Counter. The number of bits that need to be monitored for rollover is defined by bInterval. For example, if service interval is equal to 2 Bus Intervals, the beginning of the service interval is defined by the transition of the least significant bit of the Bus Interval Counter to '0'. If service interval is 4 Bus Intervals, the service interval is defined by the transition of the least significant two bits of the Bus Interval Counter to '0', and so on. If bInterval is one, a device will detect the start of the service interval when the value of the least significant bit of Bus Interval Counter changes. A device shall not assume that transactions occur at the same location within each service interval.	Device needs mechanism to detect service interval boundaries for a given endpoint.	

8.308 8.12.6 Page: 8-61	If the data is less than endpoint maximum packet size, then it will be sent as the last packet within the service interval with the lpf field set to 1.	The last packet in the service interval shall be sent with the lpf field set to 1 and can be less than or equal to MaxPacketSize bytes. Each packet except the last packet in the service interval shall be sent with the lpf field set to 0 and shall be equal to MaxPacketSize bytes.	Lpf should be set for the last packet in service interval independent of whether it is short packet or not.	
8.309 Table 8-30 Page: 8-66	Return N data packets with sequence numbers 0 to N-1. Each packet except the last shall be MaxPacketSize bytes	Return N data packets with sequence numbers 0 to N-1. Each packet except the last shall be MaxPacketSize bytes. The last packet can be less than or equal to MaxPacketSize bytes.	Last packet is not always short packet.	
8.310 Section 8.12.1.4.2.5	ACK(Deferred) - If an ACK with the Deferred (DF) flag set ~~and the Stream ID field set to Prime~~ is received, then the device shall transition the pipe to the Deferred Prime Pipe state.	ACK(Deferred) - If an ACK with the Deferred (DF) flag set is received, then the device shall transition the pipe to the Deferred Prime Pipe state.	A device in the Start Stream state may receive a deferred ACK TP with a Stream ID equal to Prime or a LCStream (if due to a HIMD). In either case, it shall return to the Idle state.	

8.311 Section 8.12.1.4.2.5	ACK(NoStream, NumP>0, PP=0) - If an ACK TP with a Stream ID equal to NoStream is received, the host has rejected the device's proposal for starting Stream n and the device shall transition to the Idle state.	ACK(NoStream, NumP=0, PP=0) - If an ACK TP with a Stream ID equal to NoStream is received, the host has rejected the device's proposal for starting Stream n and the device shall transition to the Idle state.	Correct text to match transition in Fig 8-29.	
8.312 Section 8.12.1.4.4.5 Figure 8-34	Label of INMvData Device Terminate to exit transition: ACK(CStream, NumP=0~~, PP = 0~~)	Change label of INMvData Device Terminate to exit transition to: ACK(CStream, NumP=0)	Covers the case where the host has more buffer space available, but the device has terminated the burst.	
8.313 Section 8.12.1.4.4.9	ACK(CStream, NumP=0~~, PP=0~~) - If the packet received from the device is good, then the host generates an ACK with NumP = 0~~, PP = 0~~ and Rty = 0, and transitions to the **Idle** state, exiting the HIMDSM.	ACK(CStream, NumP=0) - If the packet received from the device is good, then the host generates an ACK with NumP = 0 and Rty = 0, and transitions to the **Idle** state, exiting the HIMDSM.	Covers the case where the host has more buffer space available, but the device has terminated the burst.	
8.314 Section 8.12.1.4.2.7 Third Paragraph	DP(CStream, EOB=1) - If the device's Endpoint Data for *CStream* is less than or equal to one Max Packet Size, then the device shall send a DP to the host with EOB = 1 and transition to the **INMvData Device Terminate** state. The DPP shall contain *CStream* data.	DP(CStream, EOB=1) - If the device's Endpoint Data for *CStream* is less than or equal to one Max Packet Size, then the device may send a DP to the host with EOB = 1 and transition to the **INMvData Device Terminate** state. The DPP shall contain *CStream* data.	It's not required to set EOB unless the device wants to flow control.	

8.315 Section 8.12.1.4.2.6 Figure 8-30	INMvData Device Terminate to exit transition label; ACK(CStream,NumP=0,PP=0)	INMvData Device Terminate to exit transition label; ACK(CStream,NumP=0)	Covers the case where the host has more buffer space available, but the device has terminated the burst.	
8.316 Section 8.12.1.4.2.9	ACK(CStream, NumP=0, PP=0) - If the device receives an ACK with NumP = 0 and PP = 0, then it shall transition to the Idle state, exiting the DIMDSM. This is the normal host response (Terminating ACK) for acknowledging the last DP for CStream from the device.	ACK(CStream, NumP=0) - If the device receives an ACK with NumP = 0, then it shall transition to the Idle state, exiting the DIMDSM. This is the normal host response (Terminating ACK) for acknowledging the last DP for CStream from the device.	Covers the case where the host has more buffer space available, but the device has terminated the burst.	
8.317 Section 8.12.2 Page: 8-48	The **Direction** field shall be set to zero in TPs or DPs exchanged between the host and any control endpoint on the device.	The **Direction** field shall be set to zero in any TP or DP exchanged between the host and any control endpoint on the device regardless of the stage or the direction of the control transfer.	Clarification	
8.318 Section 8.12.2 Page: 8-48	The Data stage, if present, of a control transfer consists of one or more IN or OUT transactions and follows the same protocol rules as bulk transfers with a burst set to one.	The Data stage, if present, of a control transfer consists of one or more IN or OUT transactions and follows the same protocol rules as bulk transfers except that the **Direction** field shall always be set to zero.	Clarification	

8.319 Figure 8-33 Page: 8-49	See change in to column	Change all occurrences of IN(ACK TP) to ACK TP in the figure	Clarification	
8.320 8.12.1.4.4.9 INMvData Device Terminate	ACK(CStream, NumP=0, PP=1, Rty) - If the packet received from the device is bad, then the host generates an ACK with NumP = 0, PP = 1 and Rty = 1, and transitions to the **INMvData Device** state. The host shall continue the **INMvData Device Terminate** to **INMvData Device** loop until all retries are exhausted or a good packet is received.	ACK(CStream, NumP>0, PP=1, Rty) - If the packet received from the device is bad, then the host generates an ACK with NumP > 0, PP = 1 and Rty = 1, and transitions to the **INMvData Device** state. The host shall continue the **INMvData Device Terminate** to **INMvData Device** loop until all retries are exhausted or a good packet is received.	Correct inconsistency with Fig 8-34. "ACK(CStream, NumP=0, PP=1, Rty)" should be "ACK(CStream, NumP>0, PP=1, Rty)"	
8.321 Section 8.12.6.1 + Q1 2009 Errata Page: 8-66	• Request a single burst of 11 packets • Request a burst of eight followed by a burst of three • Request two bursts of four followed by a burst of three • Request five bursts of two followed by a burst of one.	• Request a single burst of 11 packets • Request a burst of eight followed by a burst of three • Request two bursts of four followed by a burst of three • Request five bursts of two followed by a burst of one • Request 11 bursts of one.	Example needs modification as burst of 1 is allowed for ISO now	

8.322 Section 8.13 Page: 8-69	Remove the following sentence under Table 8-33: Note: If the host does not see a response to a Data Transaction (either IN or OUT) within 10 µs, it shall assume that the transaction has failed and halt the endpoint. No retries shall be performed.	Add the following row to the end of the table: Name: tHostTransactionTimeout Description: For control, bulk and interrupt transactions, this is defined as the time without receiving a response to the last DP or ACK TP that the host sent out before the host shall assume that the transaction has failed and halt the endpoint. For Isochronous IN transactions, this is defined as the time without receiving a response to the ACK TP that a host sent. The timer is initialized and restarts counting whenever the host receives each DP that was requested by the ACK TP. If a timeout occurs the host shall not perform any more transactions to the endpoint in the current service interval. The host shall not halt the endpoint and shall restart transactions to the endpoint in the next service interval. No retries shall be performed. Min: 32 Max: 5032 Units: µs	Corrected what constitutes a host transaction timeout	

8.325 Section 8.4.2 Page: 8-6	Note: Improper use of the Force_LinkPM_Accept functionality can impact the performance of the link significantly. This capability shall only be used for compliance and testing purposes. Software must ensure that there are no pending packets at the link level before issuing a SetPortFeature command that generates an LGO_U1 or LGO_U2 link command. This LMP is sent by a hub to a device connected on a specific port when it receives a SetPortFeature (FORCE_LINKPM_ACCEPT) command. Refer to Section 10.4.2.2 and Section 10.4.2.9 for more details.	The device must stay in U1 or U2 until the downstream port initiates exit to U0. Software must ensure that there are no pending packets at the link level before issuing a SetPortFeature command that generates an LGO_U1 or LGO_U2 link command. During normal operation, this feature shall only be used if all other means of lowering the link state from U0 to U1 or U2 fail. This LMP is sent by a hub to a device connected on a specific port when it receives a SetPortFeature (FORCE_LINKPM_ACCEPT) command. Refer to Section 10.4.2.2 and Section 10.6.2.1 for more details. Note: Improper use of the Force_LinkPM_Accept functionality can impact the performance of the link significantly and in some cases (when used during normal operation only) may lead to the device being unable to return to proper operation.	Changed to allow this command in normal operation as well.	
8.326 Table 8-33 Page: 8-68	Entry for tERDYTimeout: Timeout after a device sends an ERDY to the host and when it can initiate U1 or U2 if not serviced	Timeout after a device sends an ERDY to the host and when it can initiate or accept a U1 or U2 request if not serviced		

8.327 Table 8-33 Page: 8-68	Entry for tPingTimeout: Timeout after a device receives a ping from the host and when it can initiate U1 or U2. This parameter is measured in terms of the maximum of all the service intervals for all isochronous endpoints within the device.	Timeout after a device receives a ping from the host and when it can initiate or accept U1 or U2 requests. This parameter is measured in terms of the maximum of all the service intervals for all isochronous endpoints within the device.		
8.328 Section 8.12.2 Page 8-48	Note that an endpoint may return an ACK TP with the NumP field set to zero in response to a SETUP packet if it wants to flow control the control transfer. A device must send an ERDY to start the Data or Status stage.	Note that an endpoint may return an ACK TP with the NumP field set to zero in response to a SETUP packet if it wants to flow control the control transfer. A device must send an ERDY to start the Data or Status stage. Note that the host may resume transactions to any endpoint – even if the endpoint had not returned an ERDY TP after returning a flow control response.	Host's don't have to wait for an ERDY to talk to an endpoint that is flow controlled.	
8.329 Section 8.12.2 Page 8-48	If a device sends an NRDY TP, the host shall wait for it to send an ERDY TP for that control endpoint before sending another STATUS TP to the device.	If a device sends an NRDY TP, the host shall wait for it to send an ERDY TP for that control endpoint before sending another STATUS TP to the device. However the host may resume transactions to any endpoint – even if the endpoint had not returned an ERDY TP after returning a flow control response.	Host's don't have to wait for an ERDY to talk to an endpoint that is flow controlled.	

USB 3.0 Errata 05/05/2009 Section 8.12.1.4.3 Figure 8-3 Page 18		Add an arc labeled "DP(NoStream, PP=0)" from Idle to Start Stream End	Immediately after transitioning into U0, the device sends an ERDY causing DOSPSM and HOSPSM to transition from IDLE to Start Stream After transitioning to Start Stream the device receives a DPH(Deferred) from a Hub which causes DOSPSM to transition to IDLE At this point DOSPSM and HOSPSM are out of sync. The HOSPSM, being in Start Stream then sends a DP(NoStream, PP=0), however the device is in IDLE and unable to handle this packet	**SNPS-1**

USB 3.0 Errata 05/05/2009 Section 8.12.1.4.5.6 Figure 8-8		Add "LCStream = CStream" to the labels of the following arcs coming out of OUTMvData Host Terminate state: arc labeled "ACK(CStream,NumP=0)" arc labeled "ACK(CStream,NumP>0,No Rty)" arc labeled "ACK(CStream,NumP>0,Rty)"	This is necessary to assure LCStream gets updated if a Host Initiated Move Data occurs via a DP with PP=0	**SNPS-2**
USB 3.0 Errata 05/05/2009 (SPSM diagrams)	"Note that an error (Stall, timeout, etc.) shall transition any SPSM state to the Disabled state."	Note that a Stall response from the device shall transition any SPSM state to the Disabled state. If the device does not respond (i.e. timeout), then the host shall send a Clear Feature Halt to reset the endpoint, in which case all SPSMs should transition to Disabled	Clarifying that the device will not transition on timeout as it is not aware if the transaction timeout or not.	**SNPS-3**
USB 3.0 Errata 05/05/2009 (SPSM diagrams)		rename the arc labeled "Stall or Error" to only "Stall or Clear Feature Halt" for the Device SPSM.	remove the timeout condition	**SNPS-4**

USB 3.0 Errata 05/05/2009 Item 8.018	The maximum number of packets that can be sent in a burst prior to receiving an acknowledgement is limited to the minimum of the maximum burst size (see definition of bMaxBurst in Table 9-20) of the endpoint and the value of the NumP field in the last ACK TP received by the endpoint or the host, minus the number of packets that the endpoint or the host has already sent after the packet acknowledged by the last ACK TP	The maximum number of packets that can be sent in a burst prior to receiving an acknowledgement is limited to the minimum of the maximum burst size (see definition of bMaxBurst in Table 9-20) of the endpoint and the value of the NumP field in the last ACK TP or ERDY received by the endpoint or the host, minus the number of packets that the endpoint or the host has already sent after the packet acknowledged by the last ACK TP	Missing ERDY condition	**SNPS-5**

USB 3.0 Errata 05/05/2009 Stream section	If a DP error is detected, the host shall continue the current burst until all retries are exhausted or a good packet is received.	If a DP error is detected, the host may continue the current burst until all retries are exhausted or a good packet is received. In case if host cannot continue the current burst, host will come back to this endpoint in the next available opportunity within the constraints of the transfer type.	This is in multiple places. Should find and replace Simplifies host behavior and avoids periodic traffic from being starved due to another endpoint requesting multiple retries. Also the core spec doesn't have number of retries limit	**SNPS-6**

USB 3.0 Errata 05/05/2009 Stream section	The host shall retransmit the DP(Prime) and remain in the **Prime Pipe** state	The host may retransmit the DP(Prime) and shall remain in the **Prime Pipe** state. In case if host cannot continue the current transaction, host will come back to this endpoint in the next available opportunity within the constraints of the transfer type.	This is in multiple places. Should find and replace Simplifies host behavior and avoids periodic traffic from being starved due to another endpoint requesting multiple retries. Also the core spec doesn't have number of retries limit	**SNPS-7**

USB 3.0 LDN Errata 05/05/2009 7.5.6.2 Exit from U0	An upstream port shall transition to Recovery upon not receiving any link commands within 1-ms.	An upstream port shall transition to Recovery if it does not receive any link command or any packet (as specified in Section 7.2.4.1.4) within 1-ms.	In a case when the host controller is continuously streaming ISO data without an idle time that lasts greater than 10us the device may go into recovery. This issue will be fixed with this change	**SNPS-8**
USB 3.0 spec section 8.4.3	**8.4.3 U2 Inactivity Timeout** The U2 Inactivity Timeout LMP shall be used to define the timeout from U1 to U2, or the timeout from U0 to U2 if the U1 Inactivity Timeout is disabled.	**8.4.3 U2 Inactivity Timeout** The U2 Inactivity Timeout LMP shall be used to define the timeout from U1 to U2.	There is no U1 inactivity timer for the upstream port	**SNPS-9**

USB 3.0 Spec Section 8.13 Table 8-33	Change the following max limits from 250ns to 400ns tPingResponse tNRDYResponse tDPResponse tACKResponse		250ns is very difficult to meet	**SNPS-11**

USB 3.0 spec 10.17 Table 10-15	Add a row as described in the To section	Add the following parameter with 400ns as maximum limit tHubDelay "This timing defines the maximum delay in nanoseconds a hub can introduce while forwarding packets in either direction. The time is measured from receipt of the last symbol of the packet by the receiving port until the transmitting port sends the first framing of the packet, when both the receiving and transmitting links are in U0 and the following conditions are met: • No Link Commands or SKP ordered sets or other packets are in flight. • Remote Rx Header Buffer Credit Count of the transmitting port is not zero. • Tx Header Buffer of the transmitting port is empty. A hub reports the actual delay via the wHubDelay field in SuperSpeed Hub Descriptor"	Missing requirement of a SuperSpeed Hub. Host needs to know the max limit in order to calculate the total turn around through 5 tier hub topology.	**SNPS-13**

USB 3.0 Spec, Section 8.10.1	Note that the host may resume transactions to any endpoint – even if the endpoint had not returned an ERDY TP after returning a flow control response.	Note that the host may resume transactions to any endpoint – even if the endpoint had not returned an ERDY TP after returning a flow control response. To ensure that the host and the device continue to operate normally, a host shall ignore ERDY TPs from an endpoint that is not in a flow control state.		**SNPS-14**
9.301 9.1.1.6 Page: 9-6	A device exits suspend mode when it observes wake-up signaling (refer to Section 7.4.9) on its upstream port. A device may also request the host to exit suspend mode or selective suspend by driving resume signaling (refer to Section 7.4.9)	A device exits suspend mode when it observes wake-up signaling (refer to Section 6.9.1 and Section 7.5.9) on its upstream port. A device may also request the host to exit suspend mode or selective suspend by driving resume signaling (refer to Section 6.9.1 and Section 7.5.9)	Incorrect reference	1205
9.303 9.6.7 Page: 9-46	Add the line in the 'to' column at the end of the wBytesPerInterval row.	wBytesPerInterval is reserved and must be set to zero for control and bulk endpoints.	Clarification	

9.304 9.6.1 Page: 9-30	The device descriptor of a SuperSpeed capable device has a version number of 3.0 (0300H).	The device descriptor of a SuperSpeed capable device operating in SuperSpeed mode has a version number of 3.0 (0300H). The device descriptor of a SuperSpeed capable device operating in one of the USB 2.0 modes has a version number of 2.1 (0210H).	Clarification	
9.305 9.4.12 Page: 9-28	This is the sum of times t1 through t4.	This is the sum of times t1, t2, and t4.	Correction	
9.306 New Section Page: After Section 9.4.13	See To column	Add the section 9.4.14. Heading + text is at the end of this table	See Section below	
9.307 Section 9.1.2 Page: 9-7	9. The host shall inform the device of the system exit latency using the Set SEL request.	9. The host shall inform the device of the system exit latency using the Set SEL request. Device shall accept a Set SEL request whether it is LTM capable or not and whether LTM is enabled or not."		

9.308 Section 9.4 Page: 9-15	Devices shall respond to standard device requests, even if the device has not yet been assigned an address or has not been configured.	Devices shall respond to standard device requests, even if the device has not yet been assigned an address or has not been configured. If a standard request defines a persistent parameter that can be modified, the reset/default value for that parameter unless otherwise specified is zero.	Clarify that the default/reset value of parameters are always 0 unless otherwise noted.	
9.309 Table 9-18 Page: 9-42	Interval for servicing the endpoint for data transfers. Expressed in 125-µs units. For SuperSpeed isochronous and interrupt endpoints, this value shall be in the range from 1 to 16. The bInterval value is used as the exponent for a 2(bInterval-1) value; e.g., a bInterval of 4 means a period of 8 (2(4-1) → 23 → 8). This field is reserved and shall not be used for SuperSpeed bulk or control endpoints.	Interval for servicing the endpoint for data transfers. Expressed in 125-µs units. For SuperSpeed isochronous and interrupt endpoints, this value shall be in the range from 1 to 16. However the valid ranges are 8 to 16 for Notification type Interrupt endpoints. The bInterval value is used as the exponent for a 2(bInterval-1) value; e.g., a bInterval of 4 means a period of 8 (2(4-1) → 23 → 8). This field is reserved and shall not be used for SuperSpeed bulk or control endpoints.	We don't want notification type interrupt endpoints to consume much bandwidth on the bus.	

<table>
<tr>
<td>9.310

Section 9.6.2

Page: 9-33</td>
<td>The following section defines the USB_30 device capability and the USB 2.0 Extension Descriptor a SuperSpeed device shall return.</td>
<td>The following section defines the USB 2.0 Extension Descriptor, the SuperSpeed USB Device Capability and the Container ID (if supported) that a USB 3.0 device shall return when operating in SuperSpeed mode or in any of the USB 2.0 modes.</td>
<td>Clarification that the BOS descriptor and its contents need to be returned in any operational mode.</td>
<td></td>
</tr>
<tr>
<td>9.311

Section 9.4.9

Page: 9-25

Table 9-3

Page: 9-15</td>
<td>The wIndex field in the SetFeature request has the bytes for swapped in the diagram:

<table><tr><td colspan="2">wIndex</td></tr><tr><td>Zero
Interface
Endpoint</td><td>Suspend Options</td></tr></table></td>
<td>The two columns under wIndex need to be as follows:
<table><tr><td colspan="2">wIndex</td></tr><tr><td>Suspend options</td><td>Zero
Interface
Endpoint</td></tr></table></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.312

Section 9.2.5.2

Page: 9-9</td>
<td>A device shall send a Function Wake Notification after driving resume signaling (refer to Section 7.4.9).</td>
<td>A device shall send a Function Wake Notification after driving resume signaling (refer to Section 6.9.1 and Section 7.5.9).</td>
<td>Incorrect cross reference</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</table>

10.301 Table 10-15 Page: 10-81	sDataSymbolBabble: The number of symbols in a data packet payload after the DPPSTART ordered set without and Data Packet Payload ending frame ordered set or DPPABORT ordered set that shall cause a device to detect the packet is invalid.	sDataSymbolBabble: The number of symbols in a data packet payload after the DPPSTART ordered set without a Data Packet Payload ending frame ordered set or DPPABORT ordered set that shall cause a device to detect the packet is invalid.	Correction of grammatical error.	1191
10.302 10.14.2.6 Page: 10-72	In addition, the port shall transition to the DSPORT.Disabled state when this occurs.	In addition, the port shall transition to the DSPORT.Error state when this occurs.	Incorrect state transition fixed	
10.303 Figure 10-25 Page 10-79	Link transitions from Polling to U0 USB 2.0 Connection Removed	Upstream port has been in USPORT.Training for at most tUSB2SwitchDisconnect USB 2.0 Connection Removed	Change the Label for transition from **Connected on USB 2.0 and Attempting SS Connection** to **Connected on SS**	
10.304 10.16.2.3 Page: 10-80	From the PCONNECT.Connected on USB 2.0 state when the SS link transitions from polling to U0.	From the PCONNECT.Connected on USB 2.0 state when the upstream port has been in USPORT.Training for at least tUSB2SwitchDisconnect.		

10.305 Table 10-15 Page: 10-81	Add a row to the table	Name tDSPortEnabledToU3 Description Time from when a downstream port enters DSPORT.ENABLED when the upstream hub port is in U3 and remote wakeup is disabled to when the downstream port shall initiate a transition to the U3 link state. Min Max Units 0 1 Seconds	tDSPortEnabled ToU3 was not defined in the table	
10.306 Section 10.11.6 Page 10-54	The Get_Status(PORT) request invoked by the host will return a PORT_SUPER_SPEED indication that the downstream facing port is operating at SuperSpeed.	The GetPortStatus request invoked by the host will return a PORT_CONNECTION indication along with the PORT_SPEED field set to zero if the downstream facing port has a SuperSpeed device connected.	Correction using the right indication	

10.307 Section 10.5.1.1 Page: 10-23	Add the following note to the end of the section	Note: If the port enters this state because far end receiver terminations are not detected and VBUS is present it may immediately transition to USPORT.Powered on without removing near end terminations.	Clarification	
10.308 Table 10-15 Page: 10-81	Change the tPropagationDelayJitterLimit max value	Max: 16ns from current value of 8ns	Correction	
10.309 Section 10.1.3.2 Page: 10-6	The hub ignores the route string and assumes all packets are routed directly to the hub until it enters the configured state.	The hub ignores the route string and assumes all packets are routed directly to the hub until it enters the configured state and the hub's depth is set.	Add the fact that the hub depth is required to be set before it can route packets.	SNPS-4.2
10.310 Section 10.2.2 Page: 10-10	A hub implementation shall ensure no race condition exists where a header packet that has not been deferred is queued for transmission on a downstream port with a link that is in U1, U2, or U3 or is in the process of entering U1, U2, or U3.	A hub implementation shall ensure no race condition exists where a header packet that has not been deferred is queued for transmission on a downstream port with a link that is in U1, U2, or is in the process of entering U1, U2.	There is no deferred packet if the link is in U3	SNPS-4.3

10.312 Table 1-15 Page 10-81	The definition of tTimeForResetError is "If the downstream port link remains in RxDetect.Active for this length of time during a warm reset, the reset is considered to have failed."	The definition of tTimeForResetError is "If the downstream port link remains in RxDetect.Active or RxDetect.Quiet for this length of time during a warm reset, the reset is considered to have failed."	Clarified the timeout is in RxDetect.Active or Quiet state, instead of RxDetect.Active alone.	
10.313 Section 10.3.1.6 Page 10-16	When the downstream port link enters Rx.Detect.Active during a warm reset, the hub shall start a timer to count the time it is in Rx.Detect.Active. If this timer exceeds tTimeForResetError while the link remains in Rx.Detect.active, the port shall transition to the DSPORT.Disconnected state.	When the downstream port link enters Rx.Detect.Active during a warm reset, the hub shall start a timer to count the time it is in Rx.Detect.Active or RxDetect.Quiet. If this timer exceeds tTimeForResetError while the link remains in Rx.Detect, the port shall transition to the DSPORT.Disconnected state.	Clarified the timeout is in RxDetect.Active or Quiet state, instead of RxDetect.Active alone.	
10.314 Section 10.7.8.4 Page: 10-39	1. The hub initiates U0 entry	1. If the appropriate downstream port link is in U1 or U2 and not in Recovery, the hub initiates U0 entry		

10.315 Table 10-3 Page: 10-60	This field defines the average delay in nanoseconds a hub introduces on downstream flowing header packets that it receives before forwarding them when both its upstream link and the downstream link on which it forwards the packet are in the U0 state and no Link Commands are in flight. The time is measured from receipt of the last symbol of the packet by the upstream port until the downstream port sends the first framing symbol of the packet.	This field defines the average delay in nanoseconds a hub introduces while forwarding packets in either direction. The time is measured from receipt of the last symbol of the packet by the receiving port until the transmitting port sends the first framing symbol of the packet, when both the receiving and transmitting links are in U0 and the following conditions are met: • No Link Commands or SKP ordered sets or other packets are in flight. • Remote Rx Header Buffer Credit Count of the transmitting port is not zero. • Tx Header Buffer of the transmitting port is empty. Note that the maximum value a hub is allowed to report in this field is tHubDelay.	Modify Description of wHubDelay in section 10.13.2.1 so that it defines both the downstream and upstream propagation delay through a hub. Clarifying what the maximum value a hub can set for wHubDelay	

11.301 11.4.1.1.1 Page: 11-4	The over-current condition is reported through the hub to the Host Controller, as described in Section 10.14.2	The over-current condition is reported through the hub to the Host Controller, as described in Section 10.11.5	In correct cross reference	
11.302 11.3 Page: 11-2	The USB 2.0 capabilities of a USB 3.0 device shall be designed to the USB 2.0 specification and shall meet the USB 2.0 compliance requirements.	The USB 2.0 capabilities of a USB 3.0 device shall be designed to the USB 2.0 specification and shall meet the USB 2.0 compliance requirements. Note that a SuperSpeed device operating in one of the USB 2.0 modes must return 0210H in the bcd version field of the device descriptor.	Clarification	
11.303 11.4 Page: 11-2	This section describes the USB 3.0 power distribution specification. Note that the USB 2.0 power distribution requirements still apply when a USB 3.0 device is operating at high-speed, full-speed, or low-speed.	This section describes the USB 3.0 power distribution specification. The USB 2.0 power distribution requirements still apply when a USB 3.0 device is operating at high-speed, full-speed, or low-speed. Note that a USB 3.0 peripheral device shall not draw more than 100ma until it detects far-end Rx terminations in the unconfigured state.	Clarify when a device can draw more than 100ma	

USB 3.0 spec Section C.1.5.1	U1SEL and U2SEL are calculated and programmed by host software. Example calculations for t1 are provided in Section C.2. For LTM purposes t2 and t4 should be calculated by host software as follows: • For t2, a hub may delay forwarding the ERDY by up to one maximum packet size (approximately 2.1 µs including framing) when there is a transfer in progress. Each additional hub will delay forwarding the ERDY by up to approximately 250 ns to transfer the packet. The value of t2 is determined as follows: – If there are zero hubs in the direct path between the device and the host, then t2 is zero – If there are one or more hubs in the direct path between the device and the host, then t2 is approximately 2.1 µs + 250 ns * (number of hubs – 1) • For t4, a hub may delay forwarding a packet by up to approximately 250 ns. The value of t4 is approximately 250 ns times the number of hubs in the direct path between the device and the host.	U1SEL and U2SEL are calculated and programmed by host software. Example calculations for t1are provided in Section C.2. For LTM purposes t2 and t4 should be calculated by host software as follows: • For t2, a hub may delay forwarding the ERDY by up to one maximum packet size (approximately 2.1 µs including framing) when there is a transfer in progress. Each additional hub will delay forwarding the ERDY by up to approximately tHubDelay to transfer the packet. The value of t2 is determined as follows: – If there are zero hubs in the direct path between the device and the host, then t2 is zero – If there are one or more hubs in the direct path between the device and the host, then t2 is approximately 2.1 µs + tHubDelay * (number of hubs – 1) • For t4, a hub may delay forwarding a packet by up to approximately tHubDelay. The value of t4 is approximately tHubDelay times the number of hubs in the direct path between the device and the host.		**SNPS-12**

USB 3.0 Spec Section C.1.3.1 Page:	Devices may use the Packets Pending flag (refer to Chapter 8) to help decide when to place their link in a low power state. The Packets Pending flag provides an indication of whether the host controller has any additional packets to transfer on the schedule associated with a given endpoint. When there are no more packets pending for all endpoints on a device, the device may place its link in a low power state immediately.	Devices may use the Packets Pending (PP) flag (refer to Chapter 8) to help decide when to place their link in a low power state. The Packets Pending flag provides an indication of whether the host controller has any additional packets to transfer on the schedule associated with a given non-Stream endpoint. When there are no more packets pending for all non-Stream endpoints on a device, the device may place its link in a low power state immediately. For Stream endpoints, the Packet Pending flag is an indication of whether the host controller has any additional packets to transfer on the schedule associated with a given Stream. When there are no more packets pending for any Streams and for all endpoints on a device, the device may place its link in a low power state immediately.	The current section text treats Packet Pending generically, however it must be treated slightly differently on Stream pipes.	
USB 3.0 Spec Add new Section C.1.5.2	Add new Section C.1.5.2 as noted after this table.			

9.4.14 Events and their effect on Device Parameters

This section lists the various parameters and the effect on those parameters when the device receives a control transfer command or when it observes a bus reset on the bus. An X denotes that the parameter is reset to its default value when the said event occurs. A Y denotes that the particular Parameter is modified by the event.

Control transfers and events not identified in the table shall not affect the value of parameters shown in the table.

Parameter	**Event**							
	Warm Reset	Hot Reset	Set Addres **0**	Set Address	Set Configuration	Set Interface	ClearFeature (STALL)	Disconnect
Device Address	X	X	X	Y				X
Device Configuration Value	X	X	X		Y			X
Alternate Interface Setting	X	X	X		X	Y		X
U1_SEL/U1_PEL/ U2_SEL/U2_PEL	X	X	X					X
HALT_ENPOINT	X	X	X		X	X (if the EP is affected)	X	X
FUNCTION REMOTE WAKEUP	X	X	X		X	X		X

Isochronous Delay	X	X	X					X
U2_Inactivity_Timeout	X	X	X					X
Force_LinkPM_Accept	X	X	X					X
U1/U2 Enable	X	X	X					X
LTM_ENABLE	X	X	X					X
HeaderSequence Number related to DPs	X	X	X		X	X (if the EP is affected)	X	X
Hub Depth	X	X	X		X			X
Downstream U1_Inactivity Timeout/ U2_Inactivity Timeout (Applicable to host and hub)	X	X	X					X (Hub Upstream or Hub/Host Downstream)
Port Configuration Information	X							X

Table 9-XX Device Parameters and Events

From Text (and location): table 6-21

Table 6-16.9. LFPS Transmitter Timing[1]

	tBurst				tRepeat		
	Min	**Typ**	**Max**	**Minimum Number of LFPS Cycles[2]**	**Min**	**Typ**	**Max**
Polling.LFPS	0.6 µs	1.0 µs	1.4 µs		6 µs	10 µs	14 µs
Ping.LFPS	40 ns		200 ns	2	160 ms	200 ms	240 ms
tReset[3]	80 ms	100 ms	120 ms				
U1 Exit[4,5]	300 ns		900 ns/2 ms[6]				
U2 / Loopback Exit[4,5]	80 µs[7]		2 ms				
U3 Wakeup[4,5]	80 µs[7]		10 ms				

Notes:

1. If the transmission of an LFPS signal does not meet the specification, the receiver behavior is undefined.
2. Only Ping.LFPS has a requirement for minimum number of LFPS cycles.
3. The declaration of Ping.LFPS depends on only the Ping.LFPS burst.
4. Warm Reset, U1/U2/Loopback Exit, and U3 Wakeup are all single burst LFPS signals. tRepeat is not applicable.
5. The minimum duration of an LFPS burst must be transmitted as specified. The LFPS handshake process and timing are defined in Section 6.9.2.
6. If both ports are in U1, tBurst Max is 900 ns; if one port is in U1 and the port is in U2, tBurst Max is 2 ms.
7. A Port in U2 or U3 is not required to keep its transmitter DC common mode voltage. When a port begins U2 exit or U3 wakeup, it may start sending LFPS signal while establishing its transmitter DC common mode voltage. To make sure its link partner receives a proper LFPS signal, a minimum of 80 µs tBurst must be transmitted. The same consideration also applies to a port receiving LFPS U2 exit or U3 wakeup signal.

To Text (and location): table 6-21

Table 6-1. LFPS Transmitter Timing[1]

	tBurst				tRepeat		
	Min	Typ	Max	Minimum Number of LFPS Cycles[2]	Min	Typ	Max
Polling.LFPS	0.6 µs	1.0 µs	1.4 µs		6 µs	10 µs	14 µs
Ping.LFPS[3]	40 ns		200 ns	2	160 ms	200 ms	240 ms
tReset[4,5]	80 ms	100 ms	120 ms				
U1 Exit[4,5]	300 ns		900 ns/2 ms[6]				
U2 / Loopback Exit[4,5]	80 µs[7]		2 ms				
U3 Wakeup[4,5]	80 µs[7]		10 ms				

Notes:

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C.1.5.2 Maximum Exit Latency and PING

The host controller is provided with a **Maximum Exit Latency** (MEL) value that it uses to schedule a PING relative to a periodic transfer. The Maximum Exit Latency must comprehend worst case round trip delay of sending a PING to a device and receiving the PING_RESPONSE from it.

The Maximum Exit Latency factors in the end to end latencies between host and the device. These would include other latencies associated with the time required to awaken sleeping links, the number of hubs between the host and the device, device processing time, packet propagation delays, etc.

The Maximum Exit Latency (tMEL) is the sum of parameters tMEL1, tMEL2, tMEL3, and tMEL4.

C.1.5.2.1 Maximum Exit Latency t1 (tMEL1)

The tMEL1 delay is the time to transition all links in the path to the device to U0 when the transition is initiated by the host. The method for calculating MEL t1 delay is described in sections C.2.1.1 and C.2.2.1.

C.1.5.2.2 Maximum Exit Latency t2 (tMEL2)

The tMEL2 delay is the time for a PING TP to traverse the interconnect hierarchy from the host to the device. tMEL2 is the sum of the tHubDelay values for each hub in the path, and the TP Propagation Delay (i.e. 20 symbol times or 40ns. at 5Gb/s) across each link in the path, and for a 5 Gb/s signaling rate is calculated as:

$$tMEL2 = ((40\ ns. + wHubDelay) * number\ of\ hubs) + 40\ ns.$$

Where, a wHubDelay value is provided by the SuperSpeed Hub Descriptor of each hub in the path, respectively.

C.1.5.2.3 Maximum Exit Latency t3 (tMEL3)

The tMEL3 delay is the time for the device to receive the PING and generate the PING_RESPONSE, which is defined by tPingResponse. Refer to Table 8-33.

C.1.5.2.4 Maximum Exit Latency t4 (tMEL4)

The tMEL3 delay is the time for the PING_RESPONSE to traverse the interconnect hierarchy from the device to the host. Since wHubDelay defines the downstream and upstream delay through a hub, the propagation delay of a PING_RESPONSE upstream is identical to that of a PING downstream delay (tMEL2), with one exception. In the upstream path a TP may be queued behind a Max Packet Size DP, so an additional 2.1 µs. of delay is included to comprehend the "congestion jitter". tMEL3 is calculated as:

tMEL4 = tMEL2 + 2.1 µs.

The Stream state machines were originally designed with the assumption that if an error was detected during a burst, any retries would be required to complete before the burst could complete, i.e. Rty was not allowed to be 1 if NumP = 0. The core spec has been modified to allow the Rty to be 1 when NumP = 0, which now means that retries can span bursts. The following changes modify the Stream state machines to accommodate the change.

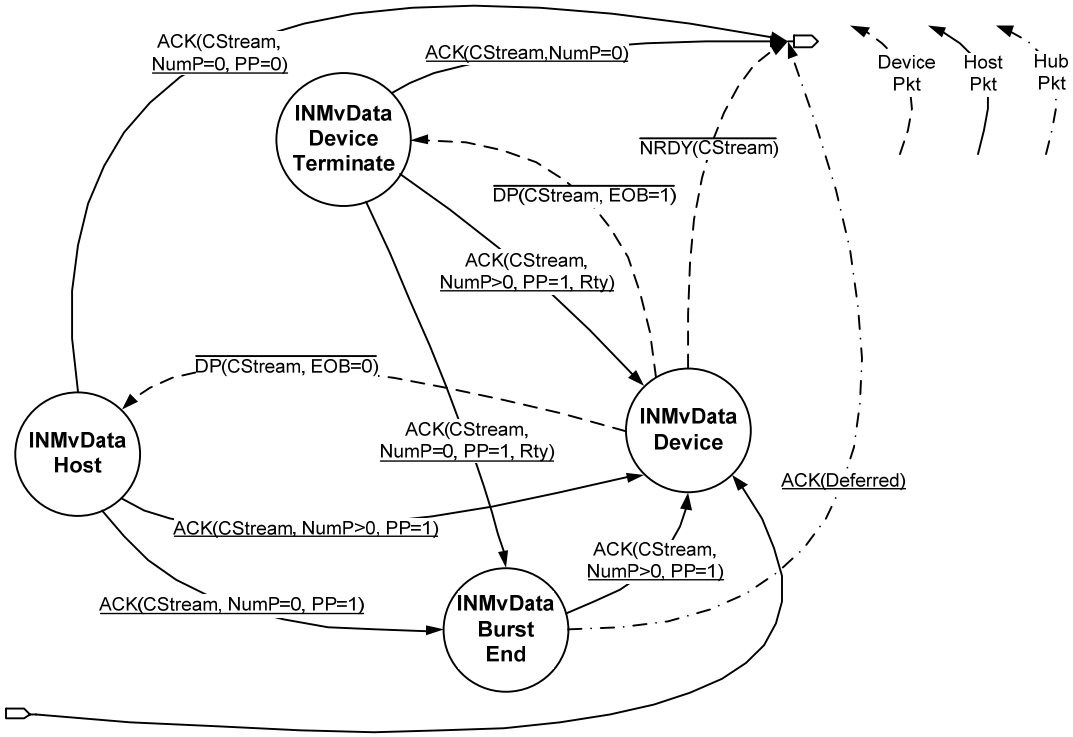
Section 8.12.1.4.2.6

Drop ACK(Deferred) transition from INMvData Host to exit.

Drop ACK(Deferred) transition from INMvData DeviceT erminate to exit.

Add ACK(CStream, NumP=0, PP=1, Rty) transition from INMvData Device Terminate to INMvData Burst End.

Replace Figure 8-30 with following:



Section 8.12.1.4.2.8

Change paragraphs as follows:

ACK(CStream, NumP>0, PP=1) - If the device receives an ACK with NumP > 0 and PP = 1, then it shall transition to the INMvData Device state. This is the host response if the current burst is not complete and it has more Endpoint Buffer space available for a CStream DP from the device. Note that the Retry (Rty=1) flag may be set in this packet if the host detected an error in the last DP from the device. If Rty is set, then the device shall return the DP with the appropriate Sequence Number the next time it sends a DP. If a DP error is detected, the host may continue the current burst until all retries are exhausted or a good DP is received.

ACK(CStream, NumP=0, PP=1) - If the device receives an ACK with NumP = 0 and PP = 1, then it shall transition to the **INMvData Burst End** state. This is the host response if it has more Endpoint Buffer space available for another *CStream* DP, however it must terminate the current burst from the device. Note that during the **INMvData Host** to **INMvData Device** transitions, the device should see NumP decrement towards 0 as the burst reaches completion. Note that the Retry (Rty=1) flag may be set in this packet if the host detected an error in the last DP from the device.

…

Section 8.12.1.4.2.9

Change paragraphs as follows:

ACK(CStream, NumP=0, No Rty) - If the device receives an ACK with NumP = 0 and RTy = 0, then it shall transition to the **Idle** state, exiting the DIMDSM. This is the normal host response (Terminating ACK) for acknowledging the successful reception of the last DP for *CStream* from the device.

ACK(CStream, NumP>0, PP=1, Rty) - If the device receives an ACK with Rty = 1, then it shall transition to the **INMvData Device** state and resend the appropriate DP. This is the host response if an error was detected on the DP from the device and the burst was not complete.

ACK(CStream, NumP=0, PP=1, Rty) - If the device receives an ACK with Rty = 1 and NumP = 0, then it shall transition to the **INMvData Burst End** state and wait for the host to initiate the next burst. This is the host response if an error was detected on the DP from the device but the burst was complete. The host shall continue the retry process in the next burst.

Section 8.12.1.4.2.10

Change paragraphs as follows:

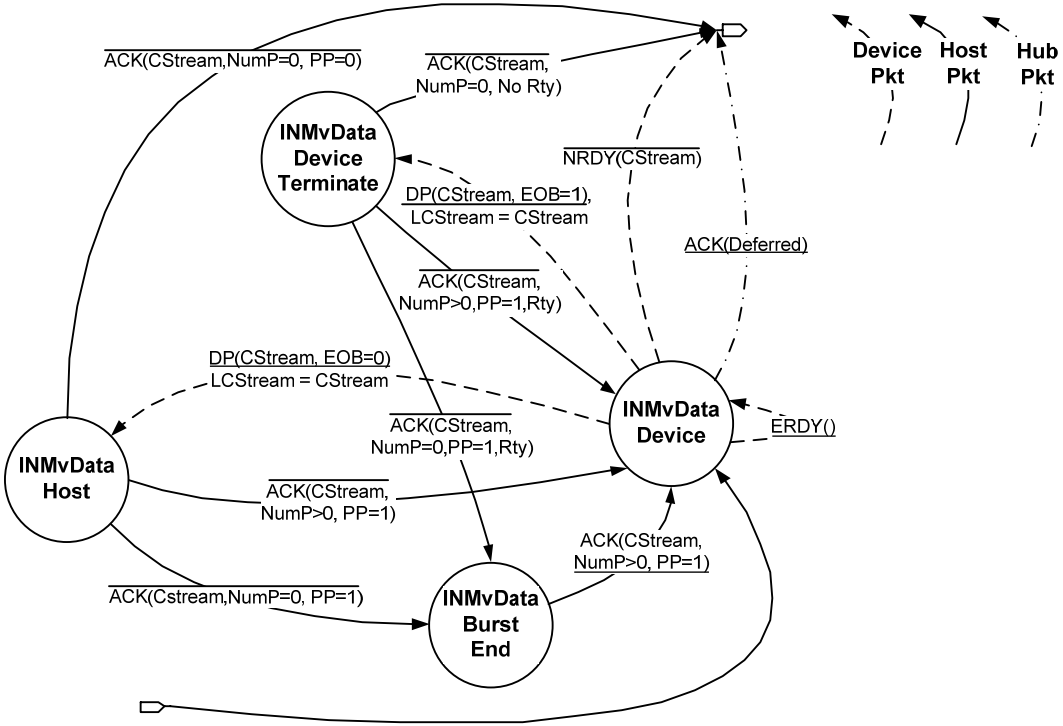
ACK(CStream, NumP>0, PP=1) - If the device receives an ACK with NumP > 0 and PP = 1, then it shall transition to the **INMvData Device** state. Note, if the Rty flag was set when the state was entered, then it shall be set upon exit.

Section 8.12.1.4.4.5

Drop ACK(Deferred) transition from INMvData Burst End to exit.

Add ACK(CStream, NumP=0, PP=1, Rty) transition from INMvData Device Terminate to INMvData Burst End.

Replace Figure 8-34 with following:



ACK(Deferred) - If the host receives an ACK with the Deferred (DF) flag set, then it shall exit the HIMDSM and transition to the **Idle** state. This packet shall be received if a link in the path between the host and the device has transitioned to a U1 or U2 state. There are two cases when this transition may occur: 1) the host has attempted a HIMD, and 2) between bursts. Case 1 is likely to occur if there has been a long host delay in obtaining buffers for the Stream. Case 2 may occur if there is a lot of endpoint activity on other devices delaying the time between bursts. The device treats this transition like a Prime Pipe and will send an ERDY to restart the stream when it receives the Deferred ACK forwarded to it by a hub.

Section 8.12.1.4.4.7

Change text as follows:

ACK(CStream, NumP>0, PP=1) - If more Endpoint Buffer space is available for the Stream and the host is continuing the current burst to the device, then the host shall generate an ACK TP with NumP > 0 and PP = 1, and transition to the **INMvData Device** state. If the host detected an error on the last DP from the device, then the Rty flag shall be set. The host may continue the **INMvData Host** to **INMvData Device** loop until all retries are exhausted or a good packet is received by the device.

ACK(CStream, NumP=0, PP=1) - If more Endpoint Buffer space is available for the Stream, however the host must terminate the current burst to the device, then the host shall generate an ACK TP with NumP = 0 and PP = 1, and transition to the **INMvData Burst End** state. If the host detected an error on the last DP from the device, then the Rty flag shall be set.

ACK(CStream, NumP=0, PP=0) - If the host did not detect an error on the last DP received from the device and the Endpoint Buffer space available for the Stream is exhausted, then the host shall generate an ACK TP with NumP = 0 and PP = 0, and transition to the **Idle** state, exiting the HIMDSM. This transition informs the device the host has exhausted its Endpoint Buffer space for the Stream.

Section 8.12.1.4.4.8

Change text as follows:

This state is entered because the host has terminated a burst on a stream pipe. The host will exit this state when it is ready to start another burst. If this state was entered while retrying (Rty =1), then the host shall continue the retry process within the constraints of the endpoint when exiting the state.

ACK(CStream, NumP>0, PP=1) - When ready to start another burst to the device on *CStream*, the host shall generate an ACK with NumP > 0 and PP = 1 and transition to the **INMvData Device** state. Note, if the Rty flag was set when the state was entered, then it shall be set upon exit.

Section 8.12.1.4.4.9

Change text as follows:

In this state the host has received the last DP from a device for this Move Data operation because the device has exhausted the Function Data it has available for *CStream*. The host responds with an acknowledgement after copying the received data to the Endpoint Buffer space associated with the Stream and exits the HIMDSM. If the DP received from the device is bad, then retries may be performed within the constraints of the endpoint type.

ACK(CStream, NumP=0, No Rty) - If the DP received from the device is good, then the host generates an ACK with NumP = 0and Rty = 0, and transitions to the **Idle** state, exiting the HIMDSM.

ACK(CStream, NumP>0, PP=1, Rty) - If the DP received from the device is bad and the current burst is not complete, then the shall host generate an ACK with NumP > 0, PP = 1 and Rty = 1, and transition to the **INMvData Device** state. The host may continue the **INMvData Device Terminate** to **INMvData Device** loop until all retries are exhausted or a good packet is received.

ACK(CStream, NumP=0, PP=1, Rty) - If the DP received from the device is bad and the current burst is complete, then the host shall generate an ACK with NumP = 0, PP = 1 and Rty = 1, and transition to the **INMvData Burst End** state. The host shall continue the retry process in the next burst.

Section 8.12.1.4.5.2

Change text as follows:

The **Prime Pipe** state informs the device that Endpoint Buffers have been assigned to one or more Streams. Note, this state is entered when the host transmits a DP(Prime) from the **Disabled** or the **Idle** state. If an error is detected in the DP data by the device, the device shall issue ACK(Prime, NumP>0, Rty) packet, retrying until a DP(Prime) is successfully received. The host may retransmit the DP(Prime) and shall remain in the **Prime Pipe** state until the device successfully receives the DP(Prime) and returns an NRDY(Prime), or the retries for the pipe are exhausted and the host halts the pipe. This case is not illustrated in the Figure above.

Section 8.12.1.4.5.5

Change text as follows:

In the **Start Stream End** state, the host has rejected a proposed Stream ID from the device because there was no Endpoint Data available for *Stream n*. Note, this state is entered when the host transmits a DP(NoStream) from the **Start Stream** state. If an error is detected in the DP data by the device, the device shall issue ACK(NoStream, NumP>0, Rty) packet, retrying until a DP(NoStream) is successfully received. The host may retransmit the DP(NoStream) and shall remain in the **Start Stream End** state until the device successfully receives the DP(NoStream) and returns an NRDY(NoStream), or the retries for the pipe are exhausted and the host halts the pipe. This case is not illustrated in the Figure above.

Section 8.12.1.4.5.8

Change text as follows:

In this state the host has received an ACK TP from a device and the device has more Function Buffer space available for *CStream*. The host responds with a DP containing Endpoint Data associated with the Stream. The pipe will also wait in this state between bursts from the host. Note, that the DP retry process may span bursts.

DP(CStream, PP=1) - If more Endpoint Data is available for the Stream and the host is continuing the current burst to the device, then the host shall generate a DP with PP = 1, and transition to the **OUTMvData Device** state. The DPP shall contain a *CStream* data payload. If the Rty flag was set in the last ACK from the device, then the host shall resend the appropriate DP until all retries are exhausted or a good DP is acknowledged by the device.

Section 8.12.1.4.5.9

Change text as follows:

ACK(CStream, NumP=0) - If the host receives and ACK TP with NumP = 0 and Rty = 0, then the host shall transition to the **Idle** state, exiting the HOMDSM. This transition occurs when the device has successfully received the last DP, and both the host and the device have exhausted their respective Endpoint Data and Function Buffer space at the same time.

ACK(CStream, NumP>0, No Rty) - If the host receives an ACK TP with NumP > 0, PP = 0, and Rty = 0, then the host shall transition to the **Idle** state, exiting the HOMDSM. This transition occurs when the device has successfully received the last DP, and the host has exhausted its Endpoint Data for the *CStream*, but the device still has more Function Buffer space available.

ACK(CStream, NumP>0, Rty) – If the host receives an ACK TP with NumP > 0 and Rty = 1, then the host shall transition the **OUTMvData Host** state and resend the appropriate DP. This transition occurs when the last packet received by the device was bad, and a Retry is required. The host shall continue the **OUTMvData Host Terminate** to **OUTMvData Host** loop until all retries are exhausted or a good DP is acknowledged by the device.